



## NOAA FISHERIES

Greater Atlantic  
Regional Fisheries  
Office

Northeast Fisheries  
Science Center



This 15-year-old male, identified as #3466, was first seen entangled in December 2019. He was able to shed the gear, and was last seen gear-free on April 7, 2021. Credit: NEFSC

NMFS Permit: 18786-04

# Fact Sheet: Ropeless Fishing

*NOAA Fisheries is developing a plan to identify the research and technology needs related to ropeless fishing, including how these needs will be met. Expected in May 2022, the “Roadmap to Ropeless Fishing” will include consideration of economic, safety, operational, and enforcement aspects of ropeless technology.*

## Innovating with Ropeless Fishing

### FISHING WITH FIXED GEAR

Fishermen setting fixed fishing gear such as lobster and Jonah crab traps/pots on the ocean bottom are required to use buoys and radar reflectors to alert other mariners to the presence of gear. This helps reduce gear conflicts. Buoy lines, which connect traps/pots on the ocean floor to surface marking systems, are also used to retrieve the gear. Buoy lines pose one of the greatest entanglement risks to right whales.

### HOW DOES ROPELESS WORK?

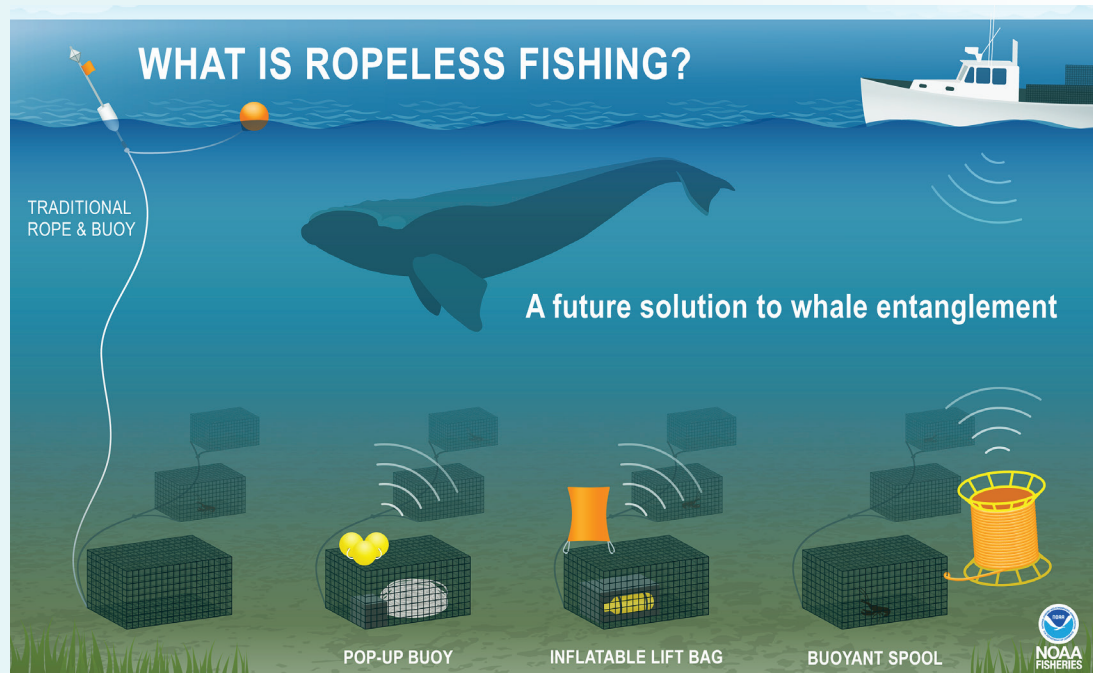
Ropeless fishing technologies generally store buoy lines on the bottom and remotely release the buoy to retrieve the line when fishermen are on site to haul in their gear. In comparison to traditional designs, ropeless systems reduce the amount of line in the water. Ropeless gear eliminates the need for the rope that tethers traps/pots to a buoy at the water's surface.

### ACCELERATING RESEARCH

NOAA Fisheries is currently working with 16 fishermen along the East Coast to test ropeless units that can operate under commercial conditions. These include retrieval devices used by a vessel at the surface that release buoyant objects, such as pop-up buoys, inflatable lift bags, and buoyant spools. All of these technologies use acoustic signals to release a line and buoyant device for fishermen to retrieve.

### LOCATING GEAR

Successful use of ropeless gear requires an effective and affordable system to locate the gear. Because there would be no surface buoys to alert mobile gear fishermen or other trap/pot fishermen to traps on the bottom, we are working with partners, including NASA and Yet2, to develop a system that would allow all fishermen to know where ropeless gear is so they can avoid it.



## The Roadmap to Ropeless Fishing

Although ropeless gear is not required anywhere, recent revisions to large whale protection rules allow the use of ropeless gear in seasonally restricted areas that would otherwise be closed to fishing. Fishermen with appropriate exemption permits may fish in these areas with ropeless gear. To advance prospects for wider use of ropeless gear, NOAA Fisheries is developing a "Roadmap" that identifies the steps toward wider use of ropeless gear. Economic studies to determine the cost of ropeless and identify strategies to reduce costs are also underway.

The draft Roadmap will be available for public review by early 2022. A final plan is expected to be released by May 2022.

### ELEMENTS OF THE ROADMAP

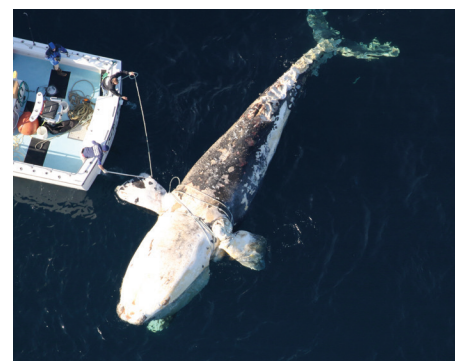
- A well-publicized, open, effective procedure for ongoing involvement of constituents to identify and address industry concerns, including but not limited to privacy, safety, gear loss, gear conflict, effects on catch, and costs of development.
- Investment in technologies needed to make ropeless work: gear and gear detection to avoid gear conflict and loss.
- Evaluation of the economic impacts of converting to ropeless fishing for various fisheries.
- Establishment of targets and timelines for adoption of ropeless gear.
- Testing of experimental designs with fishermen under actual fishing conditions.
- Working with fishery managers to revise rules to allow the use of ropeless gear without an exempted fishing permit.

## Ropeless Fishing Would Reduce the Risk of Right Whale Entanglement

The North Atlantic right whale is one of the world's most endangered large whale species, with fewer than 400 individuals remaining. Entanglement in fishing gear, particularly in buoy lines, is one of the greatest threats to right whales. NOAA Fisheries and our partners estimate that more than 85 percent of right whales have been entangled in fishing gear at least once.

Fishing gear can cut into a whale's body, cause serious injuries, and result in infections and death. Even if gear is shed or removed by trained disentangling experts, the time spent entangled can severely stress a whale, weaken it, prevent it from feeding, and sap the energy it needs to swim, feed, and reproduce. Chronic entanglements are one reason scientists think that female right whales are having fewer calves and are taking longer to have calves.

Our data show that more than 93 percent of fixed gear buoy lines within right whale habitats along the Atlantic coast are fished by the U.S. lobster and Jonah crab trap/pot fisheries in the Northeast Region. Removing these vertical lines from the water is the best way to prevent entanglements of right whales, and would benefit other large whales and sea turtles as well.



Entangled 10-year-old female right whale #3893 found dead off Virginia in January 2018. Credit: Sea 2 Shore survey.

## NORTH ATLANTIC RIGHT WHALE

